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Serial No. 09/980,193
Art Unit: 1651

In the Claims:

Please enter the following amended claims in the application. This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-11 (Canceled)

12. (Currently amended) ~~A reaction~~ In a fermentation medium for a fermentation processes comprising:

(a) in which a microorganism is propagated, wherein, ; and

(b) the fermentation medium contains a nitrogen source, trace elements and at least one member selected from the group consisting of carbon sources and substrates, wherein, the at least one member comprises esters of C₇ to C₂₃ linear or branched saturated or unsaturated fatty acids with C₁ to C₄ alkyl alcohols, vegetable triglycerides and mixtures thereof, the improvement which comprises: introducing an amount of the at least one member into the fermentation medium in the form of a an oil in water phase Inversion temperature microemulsion, wherein the emulsion comprises comprising water, an emulsifier and the at least one member an oil phase selected from the group consisting of (i) fatty acid alkyl esters, vegetable triglycerides, and mixtures thereof comprising at least one of a carbon source or a substrate, and wherein the emulsion has with an average droplet size of from 50 to 400 nm; whereby, a required amount of oxygen can be supplied to the fermentation medium with a reduced amount of mechanical stress when compared to a fermentation medium not containing the phase inversion temperature emulsion.

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13. (Currently amended) The ~~reaction~~ fermentation medium according to claim 12, wherein the emulsion has an average droplet size of from 100 to 300 nm.

14. (Currently amended) The ~~reaction~~ fermentation medium according to claim 12, wherein the emulsion has an average droplet size of from 180 to 300 nm.

15. (Currently amended) The ~~reaction~~ fermentation medium according to claim 12, wherein the emulsion has an average droplet size of from 160 to 250 nm.

16. (Currently amended) The ~~reaction~~ fermentation medium according to claim 12, wherein the oil phase comprises a fatty acid methyl ester according to the general formula (I):



wherein R^1 represents a C6-22 alkyl group and R^2 represents a methyl group.

17. (Currently amended) The ~~reaction~~ fermentation medium according to claim 12, wherein the oil phase comprises a fatty acid methyl ester selected from the group consisting of methyl oleate, methyl palmitate, methyl stearate, methyl pelargonate and mixtures thereof.

18. (Currently amended) The ~~reaction~~ fermentation medium according to claim 12, wherein the oil phase comprises an oil selected from the group consisting of coconut oil, sunflower oil, rapeseed oil and mixtures thereof.

19. (Currently amended) The ~~reaction~~ fermentation medium according to claim 12, wherein the emulsifier comprises a combination of a hydrophilic emulsifier

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having an HLB value of from 8 to 18 and a hydrophobic co-emulsifier.

20. (Currently amended) The ~~reaction~~ fermentation medium according to claim 12, wherein the emulsifier is present in an amount of from 1 to 25% by weight based on the emulsion.

21. (Currently amended) The ~~reaction~~ fermentation medium according to claim 12, wherein the microemulsion comprises water in an amount of from 20 to 90% by weight based on the total weight of the emulsion.

22. (Currently amended) The ~~reaction~~ fermentation medium according to claim 12, wherein the oil phase is present in an amount of from 10 to 80% by weight based on the emulsion.

23. (Currently amended) A fermentation process comprising:

(a) providing a ~~reaction~~ fermentation medium comprising a nitrogen source, trace elements and at least one member selected from the group consisting of carbon sources and substrates, wherein, the at least one member comprises esters of C₇ to C₂₃ linear or branched saturated or unsaturated fatty acids with C₁ to C₄ alkyl alcohols, vegetable triglycerides and mixtures thereof in the form of an oil in water phase inversion temperature emulsion, ~~wherein the emulsion comprises~~ comprising water, an emulsifier and the at least one member ~~an oil phase selected from the group consisting of (i) fatty acid alkyl esters, vegetable triglycerides, and mixtures thereof comprising at least one of a carbon source or a substrate, and,~~ wherein, the emulsion has an average droplet size of from 50 to 400 nm and, wherein, the emulsion is provided in an amount sufficient to reduce an amount of mechanical stress required to

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provide a required amount of oxygen to the fermentation process when compared to a fermentation process which does not include the phase inversion temperature emulsion;

- (b) combining the reaction medium and a microorganism; and
- (c) conducting fermentation.

24. (Currently amended) The fermentation process according to claim 23, wherein the ~~reaction~~ fermentation medium further comprises the substrate to be fermented comprising the oil phase of the emulsion.

25. (Previously presented) The fermentation process according to claim 23, wherein the oil phase is oxidized by the microorganism.

26. (Previously presented) The fermentation process according to claim 23, wherein the emulsion has an average droplet size of from 100 to 300 nm.

27. (Previously presented) The fermentation process according to claim 23, wherein the emulsion has an average droplet size of from 180 to 300 nm.

28. (Previously presented) The fermentation process according to claim 23, wherein the emulsion has an average droplet size of from 160 to 250 nm.

29. (Previously presented) The fermentation process according to claim 23, wherein the oil phase comprises a fatty acid methyl ester according to the general formula (I):



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wherein R¹ represents a C6-22 alkyl group and R² represents a methyl group.

30. (Previously presented) The fermentation process according to claim 23, wherein the oil phase comprises a fatty acid methyl ester selected from the group consisting of methyl oleate, methyl palmitate, methyl stearate, methyl pelargonate and mixtures thereof.

31. (Previously presented) The fermentation process according to claim 23, wherein the oil phase comprises an oil selected from the group consisting of coconut oil, sunflower oil, rapeseed oil and mixtures thereof.

32. (Previously presented) The fermentation process according to claim 23, wherein the emulsifier comprises a combination of a hydrophilic emulsifier having an HLB value of from 8 to 18 and a hydrophobic co-emulsifier.

33. (Previously presented) The fermentation process according to claim 23, wherein the emulsifier is present in an amount of from 1 to 25% by weight based on the emulsion.

34. (Previously presented) The fermentation process according to claim 23, wherein the water is present in an amount of from 20 to 90% by weight based on the emulsion.

35. (Previously presented) The fermentation process according to claim 23, wherein the oil phase is present in an amount of from 10 to 80% by weight based on the emulsion.